**NORTH CAROLINA DIVISION OF AIR QUALITY**

# Air Permit Review

**Permit Issue Date: ??**

**Region:** Fayetteville Regional Office
**County:** Richmond
**NC Facility ID:** 7700087
**Inspector's Name:** Gregory Reeves
**Date of Last Inspection:** 07/16/2013
**Compliance Code:** 3 / Compliance - inspection

| Facility Data | Permit Applicability (this application only) |
|---|---|
| **Applicant (Facility's Name):** Latham Pool Products, Inc. d/b/a Viking Pools - NC<br><br>**Facility Address:**<br>Latham Pool Products, Inc. d/b/a Viking Pools - NC<br>162 Enterprise Drive<br>Rockingham, NC 28379<br><br>**SIC:** 3089 / Plastics Products, Nec<br>**NAICS:** 326199 / All Other Plastics Product Manufacturing<br><br>**Facility Classification: Before:** Title V **After:** Title V<br>**Fee Classification: Before:** Title V **After:** Title V | **SIP:** 02D: .0515, .0521, .0958, .1111 and .1806<br>02Q .0317<br>**NSPS:**<br>**NESHAP:** Subpart WWWW<br>**PSD:**<br>**PSD Avoidance:** VOCs<br>**NC Toxics:**<br>**112(r):**<br>**Other:** |

| Contact Data | | | Application Data |
|---|---|---|---|
| **Facility Contact** | **Authorized Contact** | **Technical Contact** | **Application Number:** 7700087.13B<br>**Date Received:** 05/17/2013<br>**Application Type:** Modification<br>**Application Schedule:** TV-1st Time<br>**Existing Permit Data**<br>**Existing Permit Number:** 09686/R05<br>**Existing Permit Issue Date:** 04/02/2013<br>**Existing Permit Expiration Date:** 11/30/2016 |
| Humberto Viana<br>Plant Manager<br>(704) 972-0632<br>162 Enterprise Drive<br>Rockingham, NC 28379 | Tom Straub<br>President<br>(304) 884-6954<br>176 Viking Drive<br>Jane Lew, WV 26378 | Theresa Douglas<br>EHS Administrator<br>(813) 783-7212<br>40119 County Road 54<br>Zephyrhills, FL 33540 | |

| | |
|---|---|
| **Review Engineer:** Brian Bland<br><br>**Review Engineer's Signature:** **Date: ??** | **Comments / Recommendations:**<br>**Issue** 09686/T06<br>**Permit Issue Date:** ??, 2016<br>**Permit Expiration Date:** ?? |

## I. Purpose of Application

Latham Pool Products, Inc. d/b/a Viking Pools – NC (Viking) submitted an application (Application No. 7700087.13B) for an initial Title V permit on May 17, 2013. Subsequently, an addendum was received on August 30, 2013. The purpose of this addendum was to request the removal of toxic air pollutant (TAP) permit limits for all MACT affected sources. The facility currently holds Air Permit No. 09686R05 with an expiration date of November 30, 2016 for pool, spa, and related products facility in Rockingham, Richmond County, North Carolina. Air Permit Nos. 09686R03 - 09686R05 contain a "Specific Condition" requiring that this facility submit a Title V permit application by May 17, 2013 (one year from the issuance of permit revision 09686R03); Application No. 7700087.13B fulfilled that requirement. No new emission sources or control devices were added as part of this application.

## II. Facility Description

Viking manufactures swimming pools, spas, and related products made of reinforced plastic composites. There are two production lines in the manufacturing building that run in parallel and can exchange parts. The manufacturing process is a semi-continuous process. Pools and spas are manufactured by applying multiple layers of gelcoat and resins to a plastic mold. The layers are sprayed in multiple steps with time allowed in-between for the coatings to cure at room temperature. Based on the July 16, 2013 inspection report, a summary of the process is shown below:

1) Mold maintenance room (ID No. ES-02): A mold is first repaired or cleaned. In some cases, a new mold may be built as part of this step (typically two per year). The mold is then waxed so that the completed pool assembly can be easily separated from the mold.
2) Production area (ID No. ES-01):
   a. Gelcoat Layer Steps: Either gelcoat or a combination of gelcoat and "flake" material is applied to give the pool or spa its color.
   b. Structural or Corrosion Barrier Layer Step (Vinyl Ester Resin): A vinyl ester resin layer mixed with chopped fiberglass strands for strength is applied.
   c. Structural or Ceramic Layer Step (Polyester Resin): A layer of resin mixed with ceramic powder is applied to give the pool some thermal insulation.
   d. Structural Layer Step (Polyester Resin): A layer of resin with both chopped fiberglass strands and "stitchmat" is applied for additional strength. The stitchmat is an inert fiberglass mat.
   e. Final Cure: The pool is allowed to cure completely and then removed from the mold

   Any defects found in the pool (e.g., cracks) are repaired prior to moving the pool outside the building. Defects are generally repaired by applying a sealant.
3) Raw material storage area (ID No. F-01): Resin is stored typically in plastic totes in the material storage area. Gelcoat is generally stored in 55 gallon drums. Other VOC-containing materials are typically stored in 1 – 5 gallon pails. VOC/HAP emissions are generated primarily from the filling of resin storage vessels or totes.
4) Finishing operations (ID No. F-02): Once the manufacturing steps inside the building are completed, the pool is lifted off its mold and placed outside the building for finishing and storage. At this time, additional work is done including some minor sanding of edges, as well as cementing of decorative tiles and installation of piping connections, drains, and other attachments.

## III. Permitting History/Background

| | | |
|---|---|---|
| R05 | April 2, 2013 | Name changed to Latham Pool Products, Inc. d/b/a Viking Pools – NC |
| R04 | June 19,2012 | Administrative amendment is to correct a typographical error |
| R03 | May 17, 2012 | Modification to remove Synthetic Minor limitations and change facility to Title V fee class |
| R02 | Dec. 13, 2011 | Permit renewal with no modifications |
| --- | Early 2011 | Facility resumed operations |
| R01 | May 13, 2009 | Synthetic Minor issued. Title V application withdrawn. |
| --- | April 20, 2009 | Facility submitted a Synthetic Minor application with emissions limitations |
| --- | July 2008 | Facility shut down due to economic conditions |
| --- | January 2008 | Facility submitted its first time Title V permit application |
| R00 | February 2, 2007 | Issued Initial permit (Air Permit No. 09686R00). Facility was classified as a Title V facility. |

The company acquired the assets of the Blue Hawaiian Products facility in Rocky Mount, NC (facility ID No. 3300187) in early 2011. The company shut down the Blue Hawaiian operation and consolidated the two facilities into one operation, located at the Rockingham site.

## IV. Permit Modifications and Changes

The following table describes the modifications to the current permit under this permit modification.

| Page(s) | Section | Description of Change(s) |
|---|---|---|

| Page(s) | Section | Description of Change(s) |
|---|---|---|
| All | All | Update dates and permit revision number |
| All | Entire Permit | Change permit format from a state only (02Q .0300) permit to the current Title V permit standards (02Q .0500)<br><br>Federally enforceable limitations, monitoring, recordkeeping and reporting requirements were incorporated into all permit conditions (with the exception of the "State Enforceable Only" conditions) |
| N/A | A.2, A.3, A.6 and A.7 (Revision R05) | Remove:<br>15A NCAC 02Q .0304 "Permit Renewal,"<br>15A NCAC 02D .0207 "Emission Inventory,"<br>15A NCAC 02D .0535 "Notification Requirement"<br>and 15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources" from Specific Limitations as these are included in the General Conditions of 15A NCAC 02Q .0500 permits |
| N/A | A.9 (Revision R05) | Remove TAP limits for MACT affected emission sources |
| N/A | A.12 (Revision R05) | Remove 15A NCAC 02Q .0705 as this regulation has been repealed |
| N/A | A.13 and A.14 (Revision R05) | Remove requirements related to submittal of Title V permit application (15A NCAC 02Q .0504(d) and 15A NCAC 02Q .0507) |
| ?? | 2.2 A. 1 | Correct equations for "Skin Layer or Corrosion Barrier Step" and "Structural Layer Step"<br>Add equation for "ceramic layer" process. |
| ?? | 2.2 A. 2 | Add 15A NCAC 02Q .0317 Avoidance condition (15A NCAC 02D .0530 "Prevention of Significant Deterioration") for Volatile Organic Compounds |

## V. Regulatory Review

The facility is currently subject to the following regulations:
15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
15A NCAC 02D .0521 "Control of Visible Emissions"
15A NCAC 02D .0958 "Work Practices for Sources of Volatile Organic Compounds"
15A NCAC 02D .1111 "Maximum Achievable Control Technology" (Subpart WWWW)
15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions"
15A NCAC 02Q .0317 "Avoidance Condition" (PSD)

15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
This regulation establishes an allowable emission rate for particulate matter from any stack, vent, or outlet resulting from any industrial process for which no other emission control standards are applicable. This regulation applies to Total Suspended Particulate (TSP) or PM less than 100 micrometers (μm). The allowable emission rate is calculated using the following equation:

$E = 4.10 \times P^{0.67}$ for $P \leq 30$ tph
$E = 55 \times P^{0.11} - 40$ for $P > 30$ tph

where, E = allowable emission rate (lb/hr)
P = process weight rate (tph)

As shown in the Application on Table G-3 (revised 12/1/2015), expected maximum hourly PM emissions are 1.67 lbs/hr. The process is a batch process, but based on the average process rate of 0.42 lb/hour [Table G-3], the allowable emission rate is calculated to be 2.29 lb/hr. Continued compliance with this standard is expected.

Viking has a fiberglass pad filter system designed to remove fine aerosols or particulate matter emitted from the manufacturing area. The pads are mounted vertically and perpendicular to the building ventilation air flow. The filter functions as a large spray booth with no VOC controls. The system is considered an integral part of the process equipment designed to protect the ventilation system fans from damage from resin particles that can stick to surfaces.

15A NCAC 02D .0521 "Control of Visible Emissions"
Visible emission (VE) standards provided in this regulation are applicable to potential VE emissions from any stack, vent, or outlet. This regulation limits visible emissions to no more than 20 percent opacity when averaged over a six-minute period, except that six-minute periods averaging more than 87 percent opacity may occur not more than once in any hour not more than four times in any 24-hour period. Compliance with this standard is expected.

The associated permit condition will require that Viking make a monthly VE observation (ID No. ES-1 only) and submit a summary report twice per year.

15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT)
The facility is subject to the National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production, as promulgated under 40 CFR Part 63 Subpart WWWW (also referred to as MACT 4W). See Section VI for further discussion on MACT.

15A NCAC 02Q .0317 "Avoidance Conditions" (Avoidance of PSD Applicability)
Because potential VOC emissions exceed 250 tpy, via e-mail on October 17, 2014, the facility requested that a (PSD Applicability) avoidance condition limiting facility-wide potential VOC emissions to less than 250 tons/year be added to the permit.

The associated permit condition will require that Viking calculate consecutive 12-month VOC emissions on a monthly basis and submit a summary report twice per year.

15A NCAC 02D .0958, Work Practices for Sources of VOC
This regulation requires work practices to be followed when using VOCs and immediate implementation of corrective measures when these practices are not followed and monthly visual inspections of all operations and processes utilizing VOCs during normal operations along with recordkeeping and semi-annual reporting. Compliance with this standard is expected.

*State-Only Requirements*
15A NCAC 02D .1806 "Control of Odors"
The permit requires the Permittee to provide for the control and prohibition of objectionable odorous emissions. This rule applies to all operations at the facility that may produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries. Compliance with this standard is expected.

15A NCAC 02D .1100 "Control of Toxic Air Pollutants"
This rule, in accordance with an approved application for an air toxic compliance demonstration, specifies permit limits for TAPs that shall not be exceeded. The removal of this condition is discussed in Section VII.

**VI. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM**

NSPS
The Permittee is not currently subject to any New Source Performance Standards. This permit modification does not affect this status.

NESHAPS/MACT

The facility is subject to MACT WWWW. There are no changes to the MACT WWWW requirements as a result of this permit action, however to the permit condition was revised to meet current Title V permit standards (15A NCAC 02Q .0500) via the incorporation of federally enforceable limitations, monitoring, recordkeeping and reporting requirements. Continued compliance with MACT Subpart WWWW is expected.

MACT WWWW has distinct requirements for reinforced plastic composite facilities that emit less than 100 tpy of HAPs and those that emit over this amount. For those emitting over 100 tpy, the facility must reduce the total organic HAP emissions by at least 95 percent by weight and meet any applicable work practice standards in Table 4 of the Subpart. Although, Viking has the potential to emit more than 100 tpy as shown in Attachment 1, they are exempt from the 95% HAPs emission reduction requirement based on the large parts exclusion in 40 CFR 63.5805(d)(1) and as discussed below.

The facility's current operations use open molding—non-CR/HS (corrosion resistant/high strength) with mechanical or manual resin application. From Table 3 of Subpart WWWW 'organic HAP Emissions Limits for New Open Molding Sources' the current operations at the facility will be subject to the following limitations:

| Source | Activity | lb/ton of resin used (lbs/ton) limit | Table 3 reference |
|---|---|---|---|
| ES-02 | Maintenance | 440 | 6. a. |
| ES-01 | Gelcoat Layer Steps | 605 | 6. d. |
| | Skin Layer or Corrosion Barrier Step (Vinyl Ester Resin) | 113 | 1. a. |
| | Structural or Ceramic Layer Step (Polyester Resin) | 113 | 1. a. |
| | Structural Layer Step (Polyester Resin) | 113 | 1. a. |

Daily records of the amount and composition of HAP-containing coatings shall be kept. The HAP emission factors shall be calculated monthly, based on the HAP emission factor from the equations in NESHAP WWWW (shown below for current facility operations), and compliance shall be based on one of the methods described in 40 CFR 63.5810 and the air permit. Specifically, considering the source and type of activity, compliance shall be shown by one of these methods: (1) individual resin or gel coat, as applied (2) meet individual organic HAP emissions limits for each combination of operation type and resin application method or gel coat type or (3) weighted average emission limit.

HAP emission factors for current operations at the facility [Table 1 NESHAP WWWW]:

*(EF is pounds of styrene emitted per ton of resin or gelcoat processed)*

| **Source** | **Activity** | **Materials with less than 33% organic HAP** | **Materials with 33 % or more organic HAP** |
|---|---|---|---|
| ES-02 | Mold Maintenance | EF = 0.445 x %HAP x 2000 | EF = ((1.03646 x %HAP)-0.195) x 2000 |
| ES-01 | Gelcoat Layer steps | EF = 0.445 x %HAP x 2000 | EF = ((1.03646 x %HAP)-0.195) x 2000 |
| ES-01 | Ceramic Layer (Atomized ISO Resin) | EF = 0.169 x %HAP x 2000 | EF = ((0.714 x %HAP)-0.18) x 2000 |
| ES-01 | Skin Layer or Corrosion Barrier Step (Non-atomized VE Resin) | EF= 0.107 x %HAP x 2000 | EF= ((0.157 x %HAP)-0.0165) x 2000 |
| ES-01 | Structural Layer Step (Non-atomized PE Resin) | EF= 0.107 x %HAP x 2000 | EF= ((0.157 x %HAP)-0.0165) x 2000 |

Where %HAP is entered as a decimal. For example, 0.30 for a 30% HAP material.

These changes were made to the table from the existing permit:

1) Correct equations for "Skin Layer or Corrosion Barrier Step" and "Structural Layer Step." The historical equations in the permit (dating back to Air Permit No. 09686R00 issued in 2007) are for atomized resin application, but the facility uses a non-atomized spray.
2) Add equation for "ceramic layer" process.
As discussed during a February 18, 2016 teleconference call with Viking, Chris Blume (Viking's consultant and preparer of the application) and the FRO, there have been no changes in the facility operations, and the facility has been calculating emissions based on these corrected equations, not the equations that contained in Air Permits Nos. 09686R00 through 09686R05.

As noted above, the Permittee is exempted from meeting the 95% HAPs emission reduction requirement for sources that exceed 100 tons per year under Subpart WWWW based on the large parts exclusion described in 40 CFR 63.5805(d)(1). As per 40 CFR 63.5805(d)(2)(i) "If your new facility manufactures large reinforced plastic composites parts using open molding or pultrusion operations, the specific open molding and pultrusion operations used to produce large parts are not required to reduce HAP emissions by 95 weight percent, but must meet the emission limits in Table 3 to this subpart (as shown above), and as per 40 CFR 63.5805(d)(2) (ii) "A large open molding part is defined as a part that, when the final finished part is enclosed in the smallest rectangular six-sided box into which the part can fit, the total interior volume of the box exceeds 250 cubic feet, or any interior sides of the box exceed 50 square feet." The applicant indicated that the products at this facility "will qualify as "large parts" because they are larger than 250 cubic ft. They typically range from 500 to 2000 cubic ft" and thus, this facility is not required to reduce the HAPs emissions from these sources by 95%.

NSR/PSD
Richmond County is in attainment. For PSD increment tracking purposes, Richmond County has been triggered for $PM_{10}$, $SO_2$ and NOx, but no tracking is necessary for this application as there is no change in emissions associated with this initial Title V permit. Facility-wide potential VOC emissions exceed 250 tons/year, but as described earlier, the facility requested that a (PSD Applicability) avoidance condition limiting facility-wide potential VOC emissions to less than 250 tons/year be added to the permit.

112(r)
The facility is not subject to Section 112(r) because it does not store any of the regulated substances in quantities above the applicable thresholds. This permit modification does not affect the status with respect to 112(r).

CAM
As noted above, Viking has a fiberglass pad filter system designed to remove fine aerosols or particulate matter emitted from the manufacturing area. The pads are mounted vertically and perpendicular to the building ventilation air flow. The filter functions as a large spray booth with no VOC controls. It is considered an integral part of the process equipment designed to protect the ventilation system fans from damage from resin particles that can stick to surfaces. As such, the fiberglass pad filter system is not considered a control device and is not applicable to CAM.

## VII. Facility Wide Air Toxics

Toxic Air Pollutants - Session Law 2012-91/HB952
Viking requested that all TAP limits be removed from Air Permit No. 09686R05. As evidence by the permitted items equipment list, all TAP emission sources are subject to 40 CFR 63 MACT standards. The following General Statute was modified by HB 952:

*G.S. 143-215.107(a)(5) …The Department shall implement rules adopted pursuant to this subsection as follows:*
*a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:*

1. *Subject to an applicable requirement under 40 C.F.R. Part 61, as amended.*
2. *An affected source under 40 C.F.R. Part 63, as amended.*
3. *Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j), as amended.*

*b. Upon receipt of a permit application for a new source or facility, or for the modification of an existing source or facility, that would result in an increase in the emission of toxic air pollutants, the Department shall review the application to determine if the emission of toxic air pollutants from the source or facility would present an unacceptable risk to human health. Upon making a written finding that a source or facility presents or would present an unacceptable risk to human health, the Department shall require the owner or operator of the source or facility to submit a permit application for any or all emissions of toxic air pollutants from the facility that eliminates the unacceptable risk to human health. The written finding may be based on modeling, epidemiological studies, actual monitoring data, or other information that indicates an unacceptable health risk. When the Department requires the owner or operator of a source or facility to submit a permit application pursuant to this sub-subdivision, the Department shall report to the Chairs of the Environmental Review Commission on the circumstances surrounding the permit requirement, including a copy of the written finding.*

| TAP Emission Sources and MACT Applicability | |
|---|---|
| **MACT WWWW** | |
| ES-01 | Production area |
| ES-02 | Mold maintenance rooms |
| F-01 | Raw material storage area |
| F-02 | Finishing operations |

The Division of Air Quality (DAQ) considers the requested removal of the current toxic emission limits a modification for the purposes of the NC Air Toxics program and therefore an analysis under 143-215.107(a)(5)(b) is required. NC DAQ evaluated toxic emissions from this facility and determined that, based on current accepted assessment guidance, the removal of the toxic air pollutants (TAPs) limitations under 15A NCAC 02D .1100 does not present an unacceptable risk to human health.

More specifically, as described in the review document for Application No. 7700087.06A, "The applicant had determined that the emissions of styrene from the facility will be at a rate of 328.9 lb/hr. per the memo dated October 31, 2006 by Mark Yoder of the Air Quality Analysis Branch (AQAB), this emission rate of styrene resulted in a 61% of the NC Acceptable Ambient Levels (AAL) at the facility boundary line." In the cover letter to the Addendum, Viking states that there have been "no changes in emissions sources at the facility nor in the associated TAP emissions" since the 2006 TAP modeling demonstration. The initial Title V application calculates a maximum hourly emission rate of 322 lb/hr of styrene. The FRO P&O concurs with the removal of the toxics limits as it appears that "in order to increase production beyond this limit, a larger facility would need to be constructed." Additionally, the styrene emissions (lb styrene/ton resin or gelcoat) will continue to limited by MACT WWWW, specifically the open molding emission limits in Table 3.

## VIII. Facility Emissions Review

Selected emissions data shown from calendar year 2014 emission inventory:

**Facility-wide**

| Pollutant | 2014 Actual Emissions (tpy) |
|---|---|
| TSP | 0.24 |
| PM10 | 0.24 |
| VOC | 24.23 |
| Single largest HAP (Styrene) | 21.06 |
| Total HAP | 24.15 |

**By Emission Source - 2014 Actual Emissions (tpy)**

| Pollutant | ES-01 | ES-02 | F-01 | F-02 |
|---|---|---|---|---|
| TSP | 0.18 | - | - | 0.06 |
| PM10 | 0.18 | - | - | 0.06 |
| VOC | 24.01 | 0.21 | - | 0.01 |

| | | | | |
|---|---|---|---|---|
| Styrene | 20.95 | 0.11 | - | - |
| MMA | 3.06 | 0.01 | - | - |

## IX. Compliance Status

DAQ has reviewed the compliance status of this facility. During the most recent inspection, conducted on January 13, 2016 by Mr. Jeff Cole of the FRO, the facility appeared to be in compliance.

## X. Draft Permit Review Summary:

Greg Reeves of the FRO and Samir Parekh of SSCB were provided a draft permit and draft permit review document on January 28, 2016. Minor comments concerning the review document were received on January 28, 2016 from Greg Reeves and were incorporated in the review. FRO had no comments regarding the permit. A revised draft was sent for comments on March 22, 2016. No comments were received.

Theresa Elliot and Tom Straub of Viking were provided a draft permit for review on January 28, 2016. Viking's initial comments on the initial draft permit were received on February 5, 2016. A revised draft was sent to the facility on April 1, 2016. On April 4, 2016, the facility responded that they had no comments on the revised draft.

U.S. EPA Region IV was provided a draft permit and draft review for review on ??, 2016.

A 30-day public notice period via www.ncair.org was initiated on ??, 2016. The notice provides for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice were sent to persons on the Title V mailing list, the affected states and the EPA.

Recommend issuance of Air Permit No. 09686T06.